WHAT IS CLAIMED IS:

1. A vehicle surroundings monitoring apparatus for monitoring surroundings of an own vehicle, comprising:

imaging means for taking picture images and for outputting image information;

radar means;

first solid object detecting means for detecting first solid objects based on said image information;

second solid object detecting means for detecting second solid objects based on signals from said radar means;

fusion solid object establishing means for establishing fusion solid objects by fusing said first solid objects and said second solid objects;

reliability judging means for judging whether or not said fusion solid objects have a specified level of reliability; and

preceding vehicle selecting means for selecting a preceding vehicle from said fusion solid objects having said specified level of reliability.

2. A vehicle surroundings monitoring apparatus for monitoring surroundings of an own vehicle, comprising:

imaging means for taking picture images and for outputting image information;

radar means;

first solid object detecting means for detecting first solid objects based on said image information;

second solid object detecting means for detecting second solid objects based on signals from said radar means;

fusion solid object establishing means for establishing fusion solid objects composed of single first solid objects, single second solid objects and a combination of said first solid objects and said second solid objects by fusing said first solid objects and said second solid objects;

first reliability judging means for judging a degree of reliability of said fusion solid objects based on a detecting situation of said respective fusion solid objects by said first solid object detecting means;

second reliability judging means for judging a degree of reliability of said fusion solid objects based on a detecting situation of said respective fusion solid objects by said second solid object detecting means; and

preceding vehicle selecting means for selecting a preceding vehicle from said fusion solid objects when it is judged that said fusion solid objects have a specified level of reliability according to either of said first reliability judging means and said second reliability judging means.

3. The vehicle surroundings monitoring apparatus according to claim 2, wherein said first solid object detecting means register a solid object having at least two surfaces

connected with each other through a corner as a corner-like solid object and said first reliability judging means judge said reliability of said respective fusion solid objects based on the number of times of coincidence of the fusion solid objects with either of said single first solid objects and a combination of said first solid objects and said second solid objects and at the same time based on the number of times of registration of said respective fusion solid objects as said corner-like solid object by said first solid object detecting means.

4. The vehicle surroundings monitoring apparatus according to claim 2, wherein said second reliability judging means judge said reliability of said respective fusion solid objects based on the number of times of coincidence of said fusion solid objects with either of said single second solid objects and a combination of said first solid objects and said second solid objects.

5. A traveling control system for controlling a traveling of an own vehicle based on information of a preceding vehicle selected by said vehicle surroundings monitoring apparatus described in claims 1, 2, 3 and 4.